IN THE CLAIMS

1. A method for receiving first and second packets from first and second directions, respectively, comprising:

    segmenting said first and second packets into one or more X blocks and one or more Y blocks, respectively;

    interleaving said X and Y blocks into a merged block stream in a merge order according to times when said X and Y blocks are received from a communication medium; and

    purging certain said X blocks from said merged block stream when an X purge pattern is identified within one of said certain X blocks, wherein said certain X blocks are said X blocks segmented from a certain one of said first packets.

2. The method of claim 1, further comprising:

    purging certain said Y blocks from said merged block stream when a Y purge pattern is identified within one of said certain Y blocks, wherein said certain Y blocks are said Y blocks segmented from a certain one of said second packets.

3. The method of claim 2, further comprising:

    recording said X and Y blocks not purged from said merged block stream into addresses ordered according to times said X and Y blocks are received from said medium.

4. The method of claim 2, further comprising:

    marking said X and Y blocks at the starts of said first and second packets as block_one blocks, a certain said X block_one starting said certain X blocks and a certain Y block_one block starting said certain Y blocks;

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associating said X and Y block_one blocks with sequential packet addresses in said merge order, certain ones of said packet addresses associated with said certain X and Y block_one blocks;

5   pipelining said X and Y blocks in said merged block stream for providing pipelined said X and Y blocks, respectively, at a later time; and

while said certain X and Y blocks are pipelining for providing certain said pipelined X and Y blocks,

10   respectively, examining said certain X and Y blocks for said X and Y purge patterns; and storing X and Y purge/record tags at said certain packet addresses, said purge/record tags having a purge sense when said X and Y purge patterns, respectively, are identified.

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5. The method of claim 4, further comprising:

pipelining said packet addresses at the same time as said X and Y blocks are pipelining for providing pipelined said packet addresses; and

20   using certain said pipelined packet addresses associated with said certain X and Y block_one blocks for retrieving said X and Y purge/record tags; wherein

the steps of purging said certain X and Y blocks includes purging said certain pipelined X and Y blocks when

25   said X and Y purge/record tags, respectively, have said purge sense.

6. The method of claim 1, further comprising:

stuffing blank said X blocks into an X stream of

30   said X blocks when one of said second packets but not one of said first packets is present on said medium; and

stuffing blank said Y blocks into a Y stream of said Y blocks when one of said first packets but not said second packets is present on said medium; wherein:

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the step of interleaving includes using said blank X and Y blocks as place holders for merging said X and Y streams and then discards said X and Y blank blocks from said merged block stream.

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7. The method of claim 1, wherein:

the step of segmenting includes generating X and Y streams for said X and Y blocks, respectively, when said first and second packets, respectively, are present on said medium; not generating said X and Y streams during idle times; and time stamping said X and Y block streams for reestablishing reception times of said X and Y blocks.

8. The method of claim 1, further comprising:

pipelining said X and Y blocks in said merged block stream for providing pipelined said X and Y blocks, respectively, at a later time;

while said X blocks are pipelining, issuing a stop trigger when one of said X blocks includes a trigger pattern; and

recording said pipelined X and Y blocks not purged in a memory for a selected number of said pipelined X and Y blocks after said stop trigger is issued; wherein

the step segmenting includes marking at least one following one of said X blocks with said post trigger mark, said post trigger mark for use by a user for locating an event corresponding to said trigger pattern.

9. An apparatus for receiving first and second said packets from first and second directions, respectively, comprising:

X and Y block sequencers for segmenting said first and second packets into one or more X blocks and one or more Y blocks, respectively;

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a block interleaver for interleaving said X and Y blocks into a merged block stream in a merge order according to times when said X and Y blocks are received from a communication medium; and

a packet filter for purging certain said X blocks from said merged block stream when an X purge pattern is identified within one of said certain X blocks, wherein said certain X blocks are said X blocks segmented from a certain one of said first packets.

10. The apparatus of claim 9, wherein:

the packet filter is further for purging certain said Y blocks from said merged block stream when a Y purge pattern is identified within one of said certain Y blocks, wherein said certain Y blocks are said Y blocks segmented from a certain one of said second packets.

11. The apparatus of claim 10, further comprising:

a trace merge memory for recording said X and Y blocks of said purged block stream at addresses ordered according to times said X and Y blocks are received from said medium.

12. The apparatus of claim 10, wherein:

the X and Y block sequencers are further for marking said X and Y blocks at the starts of said first and second packets as block_one blocks, a certain said X block_one starting said certain X blocks and a certain Y block_one block starting said certain Y blocks; and

the block interleaver is further for associating said X and Y block_one blocks with sequential packet addresses in said merge order, certain ones of said packet addresses associated with said certain X and Y block_one blocks; further comprising:

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a block pipeline for pipelining said X and Y blocks in said merged block stream for providing pipelined said X and Y blocks, respectively, at a later time;

a record resource for examining said certain X and Y blocks for said X and Y purge patterns while said certain X and Y blocks are pipelining for providing certain said pipelined X and Y blocks, respectively, and committing X and Y purge/record tags having a purge sense when said X and Y purge patterns are identified; and

a tag memory for storing X and Y purge/record tags at said certain packet addresses.

13. The apparatus of claim 12, further comprising:

an address pipeline for pipelining said packet addresses at the same time as said X and Y blocks are pipelining for providing pipelined said packet addresses; wherein:

the packet filter uses certain said pipelined packet addresses associated with said certain X and Y block_one blocks for retrieving said X and Y purge/record tags, and purges said certain pipelined X and Y blocks when said X and Y purge/record tags, respectively, have said purge sense.

14. The apparatus of claim 9, further comprising:

X and Y hold-off queues for stuffing blank said X blocks into an X stream of said X blocks when one of said first packets but not one of said second packets is present on said medium and stuffing blank said Y blocks into a Y stream of said Y blocks when one of said second packets but not said first packets is present on said medium, respectively; wherein:

the block interleaver uses said blank X and Y blocks as place holders for merging said X and Y streams and

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then discards said X and Y blank blocks for compacting said merged block stream.

15. The apparatus of claim 9, further comprising:
        the X and Y block sequencers are further for generating X and Y streams for said X and Y blocks, respectively, when said first and second packets, respectively, are present on said medium; not generating said X and Y streams during idle times; and time stamping said X and Y block streams for reestablishing reception times of said X and Y blocks.

16. The apparatus of claim 9, further comprising:
        a block pipeline for pipelining said X and Y blocks in said merged block stream for providing pipelined said X and Y blocks, respectively, at a later time;
        a record resource for issuing a stop trigger while said X blocks are pipelining when one of said X blocks includes a trigger pattern; and
        a trace merge memory for recording said pipelined X and Y blocks not purged in a memory for a selected number of said pipelined X and Y blocks after said stop trigger is issued; wherein:
        the X and Y block sequencers are further for marking at least one following one of said X blocks with said post trigger mark, said post trigger mark for use by a user for locating an event corresponding to said trigger pattern.

17. A trace merge memory for storing a representation of packets of multi-directional communication traffic, comprising:
        first addressable locations having data for X blocks of first direction packets of said bursts; and

second addressable locations having data for Y blocks of second direction packets of said bursts, said first addressable locations interspersed with said second addressable locations; wherein,

5   addresses of said first and second addressable locations are ordered within the memory according to reception times of said X and Y blocks in said communication traffic.

10   18.   The memory of claim 17, wherein:
          said X blocks are differentiated as first said X blocks for said X blocks at the starts of said first direction packets, respectively, last said X blocks at the ends said first direction packets, respectively, and middle
15   said X blocks of said first direction packets, respectively, between said first X blocks and said last X blocks; and
          said Y blocks are differentiated as first said Y blocks for said Y blocks at the starts of said second direction packets, respectively, last said Y blocks at the
20   ends said second direction packets, respectively, and middle said Y blocks of said second direction packets, respectively, between said first Y blocks and said last Y blocks.

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